



U.S. Department
of Transportation

**Federal Aviation
Administration**

Memorandum

Subject: **ACTION:** Review and Concurrence, Equivalent Level of
Safety Finding for Cessna New Model 680
FAA Project #TC2548WI-T

Date: **April 14, 2004**

Reg Ref: § 25.811(e)(4)

From: Manager, Airframe & Cabin Safety Branch, ANM-115

Reply to: T.N. Baktha, ACE-118W
Attn. of:

To: Manager, Wichita Aircraft Certification Office, ACE-115W

ELOS: TC2548WI-T-AG-5
Memo #:

Background

The Main Cabin Door for the Model 680 Sovereign is a Type I exit and this door complies with § 25.783(h), which references §§ 25.807 through 25.813, except it does not comply with § 25.811(e)(4). The main cabin door handle for the Model 680 has a rotational motion that is perpendicular to the plane of the door and is mounted on a shaft on the forward edge of the door's integral steps. The door handle is closed when the handle is in its up position.

Following are the steps required to unlock and open the door:

- Push the red button on the handhold.
- With the button depressed the handle is pulled inboard and down following the arc described by the circular motion of the handle.
- The door may be pushed opened once the handle has been rotated to the unlatched and unlocked position.

Installation of the curved arrow markings defined in § 25.811(e)(4) is not possible because the handle rotates perpendicular to the door rather than parallel and there is not a visible surface adequate to affix the curved markings because of the doors integral stair design. Cessna Aircraft Company requested an Equivalent Level of Safety for § 25.811(e)(4) and has shown the vertical arrow and associated placards for the door handle provide an equivalent level of safety for the door handle markings required by § 25.811(e)(4)

Applicable regulation(s)

§ 25.811(e)(4) - Placards for Main Entry Door

Regulation requiring an ELOS

§ 25.811(e)(4) - Placards for Main Entry Door

Description of compensating design features or alternative standards, which allow the granting for the ELOS (including design changes, limitations or equipment need for equivalency)

The door and handle operating instruction markings are located directly under the handle's closed location on top of the first integral door step, 48 inches above the floor. The instructions, printed in 3/8 inch high red letters, state, "PUSH BUTTON IN HANDLE PULL HANDLE DOWN PUSH DOOR TO OPEN". A straight red arrow is mounted on the doorsteps and extends from the handle's closed position pointing downward to a point within 1 inch of the handle's full open position. The arrow's 3/4 inch wide shaft and 1.5 inch wide head dimensions, meet the § 25.811(e)(4)(i) requirements. The word, "OPEN" is printed in 1 inch red letters at the head of the arrow, thus meeting the § 25.811(e)(4)(iii) requirements.

Explanation of how design features or alternative standards provide an equivalent level of safety intended by the regulation

Advisory Circular AC 25-17, "Transport Airplane Cabin Interiors Crashworthiness Handbook", dated July 15, 1991, guidance material in paragraph 382 b(3) states:

"Paragraph (e)(2). An exit opening handle where motion is in the plane perpendicular to the exit is not considered a rotary handle as define in this paragraph. Therefore, the marking arrow specified is not required"

The vertical arrow and associated placards for the door handle are easily understood and located and provide an equivalent level of safety for the door handle markings required by § 25.811(e)(4). The above described markings fully comply with the requirements of linear opening motion handles described in JAR 25.811(e)(4) and ACJ 25.811(e)(4). The linear motion handle is easily operated by both a 50 % male and a 5 % female occupant standing in the aisle.

FAA approval and documentation of the ELOS

The FAA has approved the aforementioned Equivalent Level of Safety Finding in Issue Paper AG-5. This memorandum provides standardized documentation of the ELOS that is non-proprietary and can be made available to the public. The Transport Directorate has assigned a unique ELOS Memorandum number (see front page) to facilitate archiving and retrieval of this ELOS. This ELOS Memorandum Number should be listed in the Type Certificate Data Sheet under the Certification Basis section. [E.g. Equivalent Safety Findings have been made for the following regulation: § 25.811(e)(4) - Placards for Main Entry Door (documented in TAD ELOS Memo TC2548WI-T-AG-5)]

/s/

Signature: Franklin Tiangsing
Manager, Airframe & Cabin Safety Branch, ANM-115

Date: April 14, 2004

ELOS Originated by Wichita ACO:	Program Manager, Tina Miller	Routing Symbol ACE-117W
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